anterior side shortest, the posterior spots are largest; the fore half is bounded by a broadish lateral band of cream-colour, and from the inner extremities of the band a curved narrow tapering stripe of the same hue runs inwards and backwards, but their points do not meet; following this towards the spinners is a curved transverse cream-coloured stripe, being only linear in the middle, close behind which again is a short curved transverse cream line connecting the bases of two triangular patches of the same hue; spinners short, compact, underside dusky, margined with a cream-coloured suffused border. Colulus short, triangular.

Received from Prof. Traill; taken on the Amazons.

EXPLANATION OF PLATE LII.

Fig. 1. *Aetius decollatus*, ♀ (p. 1007). 1*a*. Profile. 1*b*. Eyes from above and behind. 1*c*. Maxillæ, labium, and sternum. 1*d*. Sternum, showing more clearly posterior elongation and angular points. 1*e*. Genital aperture.
2. *Friula wallacii*, ♀ (p. 1009). 2*a*. Profile. 2*b*. Abdomen from behind. 2*c*. Maxillæ, labium, and sternum. 2*d*. Lines showing natural length and width of Spider.
3. *Labdacus monastoides*, ♂ (p. 1009). 3*a*. Eyes. 3*b*. Palpus. 3*c*. Portion of palpus. 3*d*. Labium and fore part of sternum.
4. *Stephanopoides brasiliana*, ♂ (p. 1010). 4*a*. Eyes from above and behind. 4*b*. Palpus.

6. On the Genera of Rodents: an Attempt to bring up to Date the current Arrangement of the Order. By Oldfield Thomas, F.Z.S.

[Received November 13, 1896.]

Just over twenty years ago, in 1876[1], Mr. E. R. Alston contributed to this Society his invaluable paper "On the Classification of the Order Glires," a paper which in its broad outlines has formed the basis for almost every Museum Catalogue, compiler's list, and general text-book that has been written since it appeared. Based as it was on the earlier works of Waterhouse, Gervais, Brandt, and Lilljeborg, Alston's arrangement has in this way received almost universal sanction, and the present writer is far from wishing to alter the essential characteristics of the scheme.

But, owing partly to Alston's not having seen examples of many of the genera included, and partly to the great increase in the number of known forms that has taken place since he wrote, his paper has gradually become somewhat obsolete in its detailed arrangement of the subfamilies and genera, however correct his positions for the suborders and families may still be considered to be.

[1] P. Z. S. 1876, p. 61.

Now, every Museum-curator when arranging his specimens, and every writer either of a text-book or of a faunistic work, is constantly being confronted by the difficulty as to where to place in the system this or that genus of Rodents, for which he has perhaps himself neither time, inclination, or opportunity to search out a proper and appropriate position. It is for the object of helping such persons that the present paper has been prepared, so bold a venture being due to the fact that the increase in the British Museum collections has fully kept pace with the general increase of knowledge, and that there are very few genera known from any part of the world of which specimens are not in that collection[1]. With such unrivalled material available, the opportunities for mistaken work have been reduced to a minimum; and in the following list it may be said that the specimens have been allowed to sort themselves, and where my alterations are found to be strikingly different from those of Alston it will generally be found that the forms referred to were not available for examination in his time[2].

One recent author only has diverged much from Alston's system, namely Dr. Winge of Copenhagen, who, in connection with his work[3] on the Rodents of Lagoa Santa in Brazil, has written a revised general arrangement of the Rodents. His classification, however, is a rather one-sided one, being based almost entirely on the structure of the masseter muscles and the bones related to them, and, however thoughtful and clever it may be in many ways, is so widely divergent from all previous classifications that without much stronger reasons than he adduces I should not be prepared to follow it. No doubt many of his alterations are admirable, such, for example, as the reference of *Sminthus* to the *Dipodidæ*; but when we find *Pedetes* placed with *Anomalurus*, and *Platacanthomys* combined with *Myoxus* in a group set over against *Graphiurus*, we see that a good deal of confirmation will be needed before the classification the world is accustomed to is abandoned in favour of that proposed by Dr. Winge. Prof. Zittel[4] and Dr. Tullberg[5] have also contributed to the revision of the classification of the Rodents. The former gets rid of the difficulties by putting all the awkward families into a separate group, the Protrogomorpha. The latter largely follows Winge, but does not as yet enter into details.

Dr. Trouessart's most useful list of Rodents is entirely based on Alston's arrangement, and is so admittedly a compilation that no special criticism of it is here necessary.

No attempt has been made to follow Alston's example of giving diagnoses of the groups and genera, partly for the simple reason

[1] Of the 159 genera now admitted, only the following 15 are not represented in the Museum collection: *Idiurus*, *Oreinomys*, *Deomys*, *Limacomys*, *Pithecochirus*, *Hallomys*, *Hypogeomys*, *Notiomys*, *Xenomys*, *Microdipodops*, *Euchoreutes*, *Massoutiera*, *Cereomys*, *Dinomys*, and *Romerolagus*.

[2] E. g., *Heterocephalus*, *Lophuromys*, *Steatomys*, *Saccostomus*, &c.

[3] Jordfundne og nulevende Gnavere fra Lagoa Santa, E Mus. Lundii, iii. 1887.

[4] Handb. Palæontol. p. 512 (1893).

[5] Muriden aus Kamerun (Nova Acta Soc. Upsala), ser. 3, xvi. p. 4 (1893).

that the labour and time demanded would have rendered the preparation of the paper at all quite impossible, and partly because such diagnoses can never be really full and accurate unless prepared in connection with the working out of the species of each genus. Moreover, of all the groups he recognizes, Alston's paper contains diagnoses, and it would be superfluous to repeat them here. Where I differ from his conclusions full reasons are given in the footnotes.

Comparing the numbers of recent families and genera recognized in the two papers, we have 18 families in Alston against 21 now, the difference being due to the *Lophiomyidæ* being suppressed, and the *Bathyergidæ*, *Heteromyidæ*, *Erethizontidæ*, and *Pedetidæ* added. Of genera Alston recognized 100, as against 159 now considered valid; of the additional 59 just about half are formed by the breaking up of old genera and half are altogether new discoveries.

Nomenclatural questions have of necessity cropped up here and there, and the recent work of American authors in this respect has been fully utilized. It is with the greatest regret that I have had to use a good many names unfamiliar to English naturalists, but the evidence in every case is so clear as to leave no room for doubt, and none are mere matters of opinion. Recognizing that the ultimate use of these names is inevitable, I think the sooner a knowledge of them is disseminated the sooner will the intermediate stage of confusion be passed through and done with. Where comparatively unfamiliar names are used, the better-known terms are placed in brackets after them, as also are any special synonyms which it seems of importance to mention.

It should be again repeated that the special object of the list is the proper allocation of the genera in their respective subfamilies, and I have purposely been as conservative as possible with regard to the groups of higher rank, following Alston wherever there has not been very special reason for departing from his arrangement.

In regard, however, to *Anomalurus* and *Aplodontia*, both placed by him in the Sciuromorpha, I have had to give in my adhesion to the views expressed by more recent authors, that these two aberrant genera cannot rightly be placed with the Squirrels. But where they should go is by no means clear—Winge, Zittel, and Tullberg all differing in the matter; nor can I say that I agree with any one of them. As it seems a pity to abolish the convenient and time-honoured groups Sciuromorpha, Myomorpha, and Hystricomorpha, just for the sake of these genera, I have thought it best to put each of them under a special group-name [1], leaving it for further research to show their true relationships. Fortunately, their serial position in the list, like that of *Pedetes*, may be left almost exactly as in Alston's paper.

[1] I have purposely not used names ending in *morpha*, as, apart from the length and clumsiness of the resulting combinations, I do not think it at present advisable to consider the groups Anomaluri and Aplodontiæ as of the same rank as the Sciuromorpha and the others.

Suborder I. **SIMPLICIDENTATI.**

A. ANOMALURI.

I. **Anomaluridæ.**

1. *Anomalurus*, Waterh.
P. Z. S. 1842, p. 124.
2. *Idiurus*, Matsch.
SB. Ges. nat. Berl. 1894, p. 194.

B. SCIUROMORPHA.

II. **Sciuridæ.**

A. SCIURINÆ.

(*a*) 3. *Rheithrosciurus*, Gray.
Ann. Mag. N. H. (3) xx. p. 271 (1867).
4. *Xerus*, H. & E.
Symb. Phys. i. *gg* (1832).
5. *Sciurus*, Linn.
S. N. (10) i. p. 63 (1758).
6. *Tamias*, Ill.
Prodr. Syst. Mamm. p. 83 (1811).
7. *Spermophilus*, F. Cuv.
Mém. du Mus. ix. p. 293 (1822).
8. *Cynomys*, Raf.
Am. Month. Mag. ii. 45 (1817).
9. *Arctomys*, Schr.
Säug. iv. p. 721 (1792).

(*b*) 10. *Eupetaurus*, Thos.
J. A. S. B. lvii. p. 256 (1888).
11. *Petaurista*, Link.
Beytr. Nat. ii. p. 78, (1795). Type "*Sciurus petaurista.*" [*Pteromys*, G. Cuv. Léçons d'Anat. Comp. 1800.]
12. *Sciuropterus*, F. Cuv.
Ann. du Mus. x. p. 126 (1825).

B. NANNOSCIURINÆ[1].

13. *Nannosciurus*, Trouess.
Bull. Soc. Sci. Angers, 1880, p. 73.

III. **Castoridæ.**

14. *Castor*, Linn.
Syst. Nat. (10) i. p. 58 (1758).

C. APLODONTIÆ.

IV. **Aplodontiidæ.**

15. *Aplodontia*[2], Rich.
Zool. Journ. iv. p. 334 (1829).

[1] See Major, P. Z. S. 1893, p. 189.
[2] With regard to the insertion of the aspirate into the spelling of this and

D. MYOMORPHA.

V. Gliridæ.

A. Glirinæ.

16. *Glis*[1], Briss.
Règne Animal, p. 160 (1756). [*Myoxus*, Schr. Säug. iv. p. 824 (1792).]
17. *Muscardinus*, Kaup.
Entw. europ. Thierw. p. 139 (1829).
18. *Eliomys*, Wagn.
Abh. Ak. München. iii. p. 176 (1843). [*Bifa*, Latr. Le Nat. 1885.]
19. *Graphiurus*, F. Cuv. & Geoffr.
H. N. Mamm. (fol.) livr. 60 (1845).

B. Platacanthomyinæ[2].

20. *Platacanthomys*, Bly.
J. A. S. B. xxviii. p. 288 (1859).
21. *Typhlomys*, M.-Edw.
Bull. Soc. Philom. (6) xi. p. 9 (1877).

---

similar words, inquiry among pure classicists (other than zoologists) elicits the opinion that the Latins were so careless and irregular themselves in this respect, that it is impossible to make a hard-and-fast rule about it, and that we should therefore accept the original aspiration or non-aspiration of scientific names. Personally I look with loathing on these *h*-less names, but I feel bound to recognize that it is not right to alter words formed by authors who Latinized their Greek in the very way that the Latins themselves sometimes did.

[1] See Merriam, 'Science,' 1895, p. 376.

[2] Dr. Winge has replaced *Platacanthomys* in the Gliridæ, from which it was removed to the Muridæ by Dr. Peters, and in this he has been followed by Dr. Tullberg; and I am informed by Dr. Forsyth Major, to whom I am indebted for much assistance in the preparation of the present paper, that he also holds the same view. On the whole, although I think there is enough evidence of Murine affinity in *Platacanthomys* and its ally *Typhlomys* to make the question rather doubtful, I am inclined to agree to the reference of these genera to the family Gliridæ, on account of the structure of their teeth and interorbital region, the peculiar glirine twisting of their mandibular angles, and of their (or at least the former's) want of a cæcum—a character found in the Gliridæ alone of the Rodents, and one which I am now able to record for the first time in *Platacanthomys*.

As to their position within the family, I venture to think that Winge's combination of them into *Glis*, *Eliomys*, and *Muscardinus*, in a group set over as a whole against *Graphiurus*, is quite astonishingly unnatural, and is evidently due to the exaggerated value he gives to his pet character of the anteorbital structures. The *Platacanthomyinæ* form by themselves a very natural subfamily, set over against the Dormice; while even among the latter it might be quite as correct to separate *Glis* and *Muscardinus* on the one side from *Eliomys* and *Graphiurus* on the other by the pattern of the teeth, as to separate the last-named from the rest by the structure of the anteorbital region. An interesting example of the occasional variability of the last-named character is given by *Blarinomys*, which, obviously a modified offshoot of *Acodon* and *Oxymycterus*, has an anteorbital region not at all unlike that of *Graphiurus*.

VI. Muridæ.

A. Hydromyinæ.

22. *Hydromys*, Geoff.
Ann. Mus. vi. p. 81 (1805).
23. *Xeromys*, Thos.
P. Z. S. 1889, p. 247.
24. *Chrotomys*, Thos.
Ann. Mag. N. H. (6) xvi. p. 161 (1895).

B. Rhynchomyinæ.

25. *Rhynchomys*, Thos.
Ann. Mag. N. H. (6) xvi. p. 160 (1895).

C. Phlœomyinæ.

26. *Phlœomys*, Waterh.
P. Z. S. 1839, p. 108.

D. Gerbillinæ.

27. *Gerbillus*, Desm.
N. Dict. d'H. N. (1) xxiv. Tabl. p. 22 (1804).
28. *Pachyuromys*, Lat.
Le Nat. i. p. 314 (1880).
29. *Meriones*, Ill.
Prodr. Syst. Mamm. p. 82 (1811).
30. *Psammomys*, Cretszchm.
Rüpp. Atlas nördl. Afr. i. p. 56 (1826).
31. *Rhombomys*, Wagn.
Schr. Säug. Supp. iii. p. 485 (1843).

E. Otomyinæ.

32. *Otomys*, F. Cuv.
Dents Mamm. p. 168 (1825).
33. *Oreinomys*, Trouess.
Bull. Soc. Sci. Angers, 1880, p. 111.
[*Oreomys*, Heugl. Reise Nordost-Afr. ii. p. 76 (1877).][1]

F. Dendromyinæ[2].

34. *Deomys*, Thos.
P. Z. S. 1888, p. 130.
35. *Dendromys*, A. Sm.
S. Afr. Q. Journ. ii. p. 158 (1834).

[1] Very doubtfully distinct from *Otomys*.

[2] Three figures of molar teeth, representing those characteristic of the *Dendromyinæ*, *Murinæ*, and *Sigmodontinæ* respectively, will be found in my paper on *Deomys* (P. Z. S. 1888, p. 130, pl. v. figs. 7, 10, and 9). On that occasion, when describing *Deomys*, I had supposed the genus to form a new subfamily, not knowing how closely its molar teeth agreed with those of the *Dendromyinæ*, in which I now think it should be included.

36. *Limacomys*, Matsch.
SB. Ges. nat. Berl. 1893, p. 107.
37. *Steatomys*, Pet.
SB. Ak. Berl. 1846, p. 258.
38. *Malacothrix*, Wagn.
Schr. Säug. Supp. iii. p. 496 (1843).

G. Murinæ.

39. *Mus*, Linn.
S. N. (10) i. p. 59 (1758).
40. *Nesokia*, Gray.
Ann. Mag. N. H. x. p. 264 (1842).
41. *Cricetomys*, Waterh.
P. Z. S. 1840, p. 2.
42. *Malacomys*, M.-Edw.
Bull. Soc. Philom. (6) xi. p. 9 (1877).
43. *Lophuromys*, Pet.
MB. Ak. Berl. 1874, p. 234 (1875).
44. *Saccostomus*, Pet.
MB. Ak. Berl. 1846, p. 258 (1847).
45. *Acomys*, Is. Geoff.
Ann. Sci. Nat. (2) x. p. 126 (1840).
46. *Arvicanthis*, Less.
N. Tabl. R. A., Mamm. p. 147 (1842).
[*Isomys*, Sund. K. Vet.-Ak. Handl. Stockh. 1842, p. 219 (1843).]
47. *Golunda*, Gray.
Charlesw. Mag. N. H. i. p. 586 (1837).
[*Pelomys*, Peters, Reise Mossamb., Säug. p. 157 (1852).]
48. *Vandeleuria*, Gray.
Ann. Mag. N. H. x. p. 265 (1842).
49. *Chiropodomys*, Pet.
MB. Ak. Berl. 1868, p. 448 (1869).
50. *Batomys*, Thos.
Ann. Mag. N. H. (6) xvi. p. 162 (1895).
51. *Carpomys*, Thos.
Ann. Mag. N. H. (6) xvi. p. 161 (1895).
52. *Chiruromys*, Thos.
P. Z. S. 1888, p. 237.
53. *Hapalomys*, Blyth.
J. A. S. B. xxviii. p. 296 (1859).
54. *Pithecochirus*, F. Cuv. & Geoffr.
H. N. Mamm. (fol.) iv. livr. 66 (1833).
55. *Crateromys*, Thos.
Ann. Mag. N. H. (6) xvi. p. 163 (1895).
56. *Craurothrix*, Thos.
Ann. Mag. N. H. (6) xviii. p. 246 (1896).
[*Echiothrix*, Gray, P. Z. S. 1867, p. 599.]
57. *Mastacomys*, Thos.
Ann. Mag. N. H. (5) ix. p. 413 (1882).

58. *Uromys*, Peters.
MB. Ak. Berl. 1867, p. 343. [*Pogonomys*, M.-Edw.]
59. *Conilurus*, Og.
Tr. Linn. Soc. xviii. p. 125 (1839). [*Hapalotis*, Licht. Darst. Säug. pt. iv. pl. 29 (1829).]

II. Lophiomyinæ.
60. *Lophiomys*[1], M.-Edw.
L'Inst. xxxv. p. 46 (1867).

I. Sigmodontinæ.
(*a*) (Palæarctic.)
61. *Hamster*, Lac.
Mém. de l'Inst. iii. p. 495 (1801). [*Cricetus*, G. Cuv. Règne Anim. i. p. 198 (1817).]
(*b*) (African.)
62. *Mystromys*, Wagn.
Arch. f. Nat. 1841, p. 132.
(*c*) (Mascarene.)
63. *Brachytarsomys*, Günth.
P. Z. S. 1875, p. 79.
64. *Nesomys*, Pet.
SB. Ges. nat. Berl. 1870, p. 54 (1871).
65. *Hallomys*, Jent.
Notes Leyd. Mus. i. p. 107 (1879).
66. *Brachyuromys*, F. Maj.
Ann. Mag. N. H. (6) xviii. p. 322 (1896).
67. *Hypogeomys*, Grandidier.
Rev. et Mag. Zool. 1869, p. 338.
68. *Gymnuromys*, F. Maj.
Ann. Mag. N. H. (6) xviii. p. 324 (1896).
69. *Eliurus*, M.-Edw.
Ann. Sci. Nat. (6) xx. art. 1, *bis*, p. 1 (1886).
(*d*) (American.)
70. *Onychomys*, Bd.
Mamm. N. A. p. 458 (1857).
71. *Peromyscus*, Glog.
Naturgesch. p. 95 (1841). [*Sitomys*, Fitz. SB. Ak. Wien, lvi. p. 97 (1867). *Vesperimus*, Coues, P. Ac. Philad. 1874, p. 178.]

[1] By an unfortunate accident Mr. Lydekker (Geogr. Mamm. p. 239, 1896) transposed to the recent *Lophiomys* Depéret's name *Trilophomys*, which was intended by its author for a renaming of his own fossil *Lophiomys*, 1890, *nec* M.-Edw. 1867. For the recent animal therefore Milne-Edwards's well-known name, being the earliest of all, is, of course, still available.

72. *Rhipidomys*, Tsch.
Faun. Peruan. p. 183 (1845).
73. *Tylomys*, Pet.
MB. Ak. Berl. 1866, p. 404.
74. *Holochilus*, Brandt.
Mém. Ac. Pétersb. iii. p. 428 (1835). [*Nectomys*, Pet.]
75. *Sigmodon*, Say & Ord.
Journ. Ac. Philad. iv. p. 352 (1825).
76. *Oryzomys*, Bd.
Mamm. N. A. p. 458 (1857).
77. *Reithrodontomys*, Gigl.
Ric. Distr. Geogr. Gen. p. 160 (1873). [*Ochetodon*, Coues, P. Ac. Philad. 1874, p. 184.]
78. *Eligmodontia*, F. Cuv.
Ann. Sci. Nat. (2) vii. p. 168 (1837). [*Calomys*, Waterh., *nec* Geoff. *Hesperomys* (s.s.), Waterh.]
79. *Neotomys*, Thos.
Ann. & Mag. N. H. (6) xiv. p. 346 (1894).
80. *Reithrodon*, Waterh.
P. Z. S. 1837, p. 29.
81. *Phyllotis*, Waterh.
P. Z. S. 1837, p. 28.
82. *Scapteromys*, Waterh.
P. Z. S. 1837, p. 20.
83. *Ichthyomys*, Thos.
P. Z. S. 1893, p. 337.
84. *Acodon*, Meyen.
N. Act. Leop. xvi. p. 600 (1833). [*Abrothrix*, Waterh. P. Z. S. 1837, p. 21.]
85. *Oxymycterus*, Waterh.
P. Z. S. 1837, p. 21.
86. *Blarinomys*, Thos.
Ann. & Mag. N. H. (6) xviii. p. 310 (1896).
87. *Notiomys*, Thos.
M.-Edw. Miss. Scient. Cap Horn, Mamm. p. 23 (1890).

J. NECTOMINÆ.

88. *Neotoma*, Ord.
Journ. Ac. Philad. iv. p. 346 (1825).
89. *Xenomys*, Merr.
P. Biol. Soc. Wash. vii. p. 159 (1892).
90. *Hodomys*, Merr.
P. Ac. Philad. 1894, p. 232.

K. MICROTINÆ.

(*a*) 91. *Phenacomys*, Merr.
N. Am. Faun. no. 2, p. 28 (1889).

92. *Evotomys*, Coues.
P. Ac. Philad. 1874, p. 186.
93. *Microtus*, Schrank.
Fauna Boica, i. p. 66 (1798). [*Arvicola*, Lac. Mém. de l'Inst. iii. p. 495 (1801).]

(*b*) 94. *Synaptomys*, Bd.
Mamm. N. A. pp. xliv, 558 (1857).
95. *Lemmus*, Link.
Zool. Beytr. i. pt. 2, p. 75 (1795). [*Myodes*, Pall. Zoogr. Ross.-Asiat. p. 173 (1811).]
96. *Dicrostonyx*, Glog.
Naturgesch. p. 97 (1841). [*Cuniculus*, Wagl. Isis, 1832, p. 1220.]

(*c*) 97. *Ellobius*, Fisch.
Zoognosia, iii. p. 72 (1814).

L. SIPHNEINÆ [1].

98. *Siphneus* [2], Bts.
Het geslacht d. Muizen, p. 20 (1827).

VII. Spalacidæ [3].

A. RHIZOMYINÆ.

99. *Rhizomys*, Gray.
P. Z. S. 1831, p. 95.

[1] Mr. Gerrit Miller, to whose paper on Voles and Lemmings I am much indebted, has thrown doubt on the validity of the *Siphneinæ* as a subfamily (N. Am. Fauna, no. 12, p. 8, footnote, 1896), and in so far as regards *Ellobius*, hitherto always put with *Siphneus*, he is apparently correct, as its differences from the Voles and Lemmings do not seem to be much greater than those that separate these two groups from each other, and the Voles, Lemmings, and *Ellobius* may suitably form three groups of the subfamily *Microtinæ*. I have had to reverse the order of the genera from that given by Mr. Miller, in order to bring the Murine *Phenacomys* and *Evotomys* towards the Muridæ, *Synaptomys* towards the Voles, and the Lemminge, as a whole, towards *Ellobius*.

With regard to *Siphneus* itself, however, I think its peculiarities are amply sufficient to necessitate its being set over against all the rest of the group in a subfamily by itself. The modification that its anteorbital foramen has undergone, in comparison with that of the *Microtinæ*, is, however, curiously paralleled by that of the widely different *Spalacidæ*, and may be simply an adaptive modification due to a strictly talpine life. But in any case its differences, both external, cranial, and dental, are clearly sufficient to demand separate subfamily rank.

[2] Dr. J. A. Allen, Bull. Am. Mus. N. H. vii. p. 183 (1895), considers Kerr's *Myotalpa* should replace *Siphneus*; but as the result is attained by a method about the detailed working of which opinions are still divided, I provisionally use the better-known term.

[3] Not only do the *Bathyerginæ* of Alston's Spalacidæ of course go off to form a separate family, but it is very doubtful whether *Spalax* and *Rhizomys*, combined by him in the *Spalacinæ*, are rightly put even in one family, their resemblances being perhaps more adaptive than genetic. Winge puts *Rhizomys* with the Muridæ, and *Spalax* with the Dipodidæ, but does not give sufficient reasons for these allocations. This is one of those cases where a myological investigation is likely to be of much service; and the group is commended to the attention of Mr. Parsons, whose recent papers on Rodent myology have been of much

100. *Tachyoryctes*, Rüpp.[1]
[*Chrysomys*, Gray, List Mamm. B. M. p. 150 (1843).]

B. Spalacinæ.

101. *Spalax*, Güld.
Nov. Comm. Petrop. xiv. art. i. p. 409 (1770).

VIII. Geomyidæ.

102. *Geomys*[2], Raf.
Am. Month. Mag. ii. p. 45 (1817).

103. *Thomomys*, Wied.
N. Act. Leop. xix. pt. i. p. 383 (1839).

IX. Heteromyidæ.

A. Dipodomyinæ.

104. *Dipodomys*, Gray.
Ann. Mag. N. H. vii. p. 521 (1841).

105. *Perodipus*, Fitz.
SB. Ak. Wien, lvi. p. 126 (1867).

106. *Microdipodops*, Merr.
N. Am. Faun. no. 5, p. 115 (1891).

B. Heteromyinæ.

107. *Perognathus*[3], Wied.
N. Act. Ac. Leopold. xix. pt. i. p. 369 (1839).

108. *Heteromys*, Desm.
Mamm. ii. p. 313 (1822).

---

service to me. Some important observations on the relations of the *Rhizomyinæ* to the Mascarene Sigmodontes are given by Dr. Forsyth Major, *supra* p. 979.

[1] The African Bamboo-Rats, given provisionally the above name by Rüppell, were rightly distinguished by Gray, but the distinction has been generally lost sight of till now. The molars are of quite a different structure in the two groups.

It is unfortunate that Rüppell's name has to be used for this genus, as he deliberately rejected the idea of its being distinct (from *Bathyergus*!), and yet proposed the name in case other workers thought it valid. It is to be hoped that there are few people now left who would do a thing like this, by which an author attempts to secure priority for his own name at the expense of somebody else's work, while he fears to take the responsibility of describing a new form for himself. Some naturalists even refuse to accept such names, and I wish I could feel justified in doing the same.

[2] Dr. Merriam has divided the old genus *Geomys* into eight genera, but for the purposes of the present paper these may be most conveniently treated as of subgeneric rather than generic rank, sound as their basis as natural groups no doubt is.

[3] Dr. Coues (Mon. N. Am. Rod. p. 495, 1877) speaks of separate subfamilies for *Perognathus* and *Heteromys*; but they seem really to be very closely allied to each other, especially if some of the larger species of the former, such as *P. paradoxus*, be compared with members of the *H. alleni* group of *Heteromys*.

X. Bathyergidæ.

109. *Bathyergus*, Ill.
Prodr. Syst. Mamm. p. 86 (1811).
110. *Georychus*, Ill.
Prodr. Syst. Mamm. p. 87 (1811).
111. *Myoscalops*, Thos.
P. Z. S. 1890, p. 448. [*Heliophobius*, Pet. MB. Ak. Berl. 1846, p. 243.]
112. *Heterocephalus*, Rüpp.
Mus. Senckenb. iii. p. 99 (1842).

XI. Dipodidæ.

A. Sminthinæ.

113. *Sminthus*, Keys. & Blas.
Wirb. Europ. p. 38 (1840).

B. Zapodinæ[1].

114. *Zapus*, Coues.
Bull. U. S. Geol. Surv. ser. 2, no. 5, p. 253 (1873).

C. Dipodinæ.

115. *Dipus*, Gmel.
S. N. i. p. 157 (1788).
116. *Allactaga*, F. Cuv.
P. Z. S. 1836, p. 141.
117. *Platycercomys*, Brandt.
Bull. Ac. Pétersb. 1844, p. 209.
118. *Euchoreutes*, W. Scl.
P. Z. S. 1890, p. 610.

[1] The erection of the *Zapodinæ* into a family has been advocated by Dr. Coues (Mon. Am. Rod. p. 461, 1877), and, as a consequence, the giving to the *Dipodinæ* and *Pedetinæ* similar rank. Not only does this seem as unnecessary as it is inconvenient, but the characters of *Sminthus*, recognized as a Dipodid only since Dr. Coues wrote, appear to make the correctness of Alston's view more evident than ever. For with typical Dipodine teeth, it possesses an absolutely Zapodine skull, combined with a more Murine form than even *Zapus*. Moreover, the recent discovery of *Zapus* in the Old World (Poussargues, Bull. Mus. d'Hist. Nat. 1896, p. 1) removes the geographical isolation which may have influenced Dr. Coues in the conclusion he came to. The three subfamilies here recognized are no doubt well defined from each other, but if in any general raising of rank all round, such as many people (Americans especially) are fond of, these subfamilies are again made into families, it will have to be on some better ground than the untenable view adopted by Dr. Coues, that *Zapus* is as nearly allied to the Muridæ as it is to the Jerboas. *Pedetes*, on the other hand, as appears below, should certainly be removed from the family, its differences from all the Dipodidæ being infinitely greater than any of theirs from each other.

E. HYSTRICOMORPHA.

XII. **Pedetidæ**[1].

119. *Pedetes*, Ill.
Prodr. Syst. Mamm. p. 81 (1811).

XIII. **Octodontidæ**.

A. Ctenodactylinæ.

120. *Ctenodactylus*, Gray.
Spic. Zool. p. 10 (1830).
121. *Massoutiera*, Lat.
Le Nat. 1885, p. 21.
122. *Pectinator*, Bly.
J. A. S. B. xxiv. p. 294 (1855).
123. *Petromys*, A. Sm.
S. Afr. Q. J. ii. p. 2 (1831).

B. Octodontinæ.

124. *Ctenomys*, De Blainv.
Bull. Soc. Philom. 1826, p. 62.
125. *Aconaemys*, Amegh.
Revist. Argent. i. p. 245 (1891). [*Schizodon*, Waterh. P. Z. S. 1841, p. 91, *nec* Agass.]
126. *Spalacopus*, Wagl.
Isis, 1832, p. 1219.
127. *Octodon*, Benn.
P. Z. S. 1832, p. 46.
128. *Abrocoma*, Waterh.
P. Z. S. 1837, p. 30.

C. Loncherinæ.

(*a*) 129. *Dactylomys*, Is. Geoff.
Ann. Sci. Nat. (2) x. p. 126 (1838).
130. *Thrinacodus*, Günth.
P. Z. S. 1879, p. 144.

[1] While many naturalists have noticed the Hystricomorph affinities of *Pedetes*, no one in modern times (except Dobson, who transferred the whole of the Dipodidæ) seems to have thought of actually placing it among them. To me this appears to be clearly the proper course, as there seems to be scarcely a character in its skull or teeth which is not found in one member or another of that group. Even its lower jaw is of a partially Hystricine type, and in any case is not of sufficient importance to outweigh its many affinities to the Hystricomorpha. Wiegmann in 1832 placed it among his "*Lagostomi*" (Handb. Zool. p. 56), but that was apparently rather by accident than good judgment, as his general classification is of a very antique type. All other authors seem to have kept it in the Dipodidæ, until Winge, in his general alteration of positions, placed it with *Anomalurus*, an allocation with which I feel quite unable to agree.

Within the Hystricomorpha it is difficult to say where *Pedetes* would best be placed. Its skull is very like that of *Thryonomys*, its teeth like those of *Spalacopus*, while it has also some resemblances to the Chinchillidæ. For the present, therefore, until further researches are made, I have put it at the beginning of the group, where it will occupy the same serial position as in Alston's paper, although shifted into a different section.

131. *Cannabateomys*, Jent.
Notes Leyd. Mus. xiii. p. 105 (1891).
132. *Loncheres*, Ill.
Prodr. Syst. Mamm. p. 90 (1811). [*Lasiuromys*, Dev. Rev. Zool. (2) iv. p. 353 (1852).]
(*b*) 133. *Thrichomys*, Trouess.
Bull. Soc. Sci. Angers, 1880, p. 179. [*Nelomys*, Lund, *nec* Jourd.]
134. *Cercomys*, F. Cuv.
Mamm. 6e livr. (1829).
135. *Carterodon*, Waterh.
Nat. Hist. Mamm. ii. p. 351 (1848).
136. *Mesomys*, Wagn.
Arch. f. Nat. 1845, pt. i. p. 145.
137. *Echinomys*, Desm.
N. Dict. d'H. N. x. p. 54 (1817).

D. Capromyinæ.

138. *Myocastor*, Kerr[1].
Linn. An. K. p. 225 (1792). [*Myopotamus*, Geoff. Ann. Mus. vi. p. 81 (1805).]
139. *Capromys*, Desm.
Mém. Soc. d'H. N. i. p. 44 (1822).
140. *Plagiodontia*, F. Cuv.
Ann. Sci. Nat. (2) vi. p. 347 (1836).
141. *Thryonomys*, Fitz.
SB. Ak. Wien, lvi. p. 141 (1867). [*Aulacodus*, Temm. Mamm. i. p. 245 (1827), *nec* Eschsch. *Triaulacodus*, Lyd. Geogr. Distr. Mamm. p. 91 (1896).]

XIV. **Hystricidæ.**

142. *Hystrix*, Linn.
S. N. (10) i. p. 56 (1758).
143. *Atherura*, G. Cuv.
Règne Anim. éd. 2, i. p. 215 (1829).
144. *Trichys*, Günth.
P. Z. S. 1876, p. 739.

XV. **Erethizontidæ**[2].

A. Erethizontinæ.

145. *Erethizon*, F. Cuv.
Mém. d. Mus. ix. p. 426 (1822).

[1] See J. A. Allen, Bull. Am. Mus. N. H. vii. p. 182 (1895).

[2] The wide difference between the American and the Old World Porcupines has been realized by all naturaliste, and after Mr. Parsons' strong observations on the differences in their myology (P. Z. S. 1894, p. 295), it seems better definitely to separate them into two families. With regard to *Chætomys*, the great difference between its teeth and those of the other *Erethizontidæ* makes it

146. *Coendou*, Lac.
Mém. de l'Inst. iii. p. 496 (1801). [*Synetheres* and *Cercolabes*, F. Cuv. Mém. Mus. ix. p. 427 (1822).]

B. CHÆTOMYINÆ.

147. *Chætomys*, Gray.
P. Z. S. 1848, p. 21.

XVI. **Chinchillidæ.**

148. *Chinchilla*, Benn.
Gard. Zool. Soc. i. p. 1 (1829).
149. *Lagidium*, Mey.
N. Act. Ac. Leop. xvi. p. 576 (1833).
150. *Lagostomus*, Brooks.
Trans. Linn. Soc. xvi. p. 102 (1828).

XVII. **Dasyproctidæ.**

151. *Dasyprocta*, Ill.
Prodr. Syst. Mamm. p. 93 (1811).
152. *Cœlogenys*, F. Cuv.
Ann. Mus. x. p. 203 (1807).

XVIII. **Dinomyidæ.**

153. *Dinomys*, Pet.
MB. Ak. Berl. 1873, p. 551.

XIX. **Caviidæ.**

154. *Cavia*, Pall.
Misc. Zool. p. 30 (1766).
155. *Dolichotis*, Desm.
Mamm. ii. p. 360 (1822).
156. *Hydrochœrus*, Briss.
Règne Anim. p. 116 (1756).

Suborder II. **DUPLICIDENTATI.**

F. LAGOMORPHA.

XX. **Ochotonidæ.**

157. *Ochotona*, Link.
Beytr. Nat. ii. p. 74 (1795). [*Lagomys*[1], G. Cuv. Tabl. Élém. p. 132 (1798).]

---

at first sight difficult to believe that it is really a member of the family at all, and not a relative either of *Loncheres* or *Cœlogenys*, as Burmeister suggested. But further examination leads me to think that its dental resemblance to *Loncheres* is only superficial, and that its closeness to *Coendou* in other respects, including the identity of the structure of the feet and pterygoid regions, makes it best placed as a peculiar subfamily of the *Erethizontidæ*.

[1] *Lagomys* (1798), as used for the Pikas, is doubly invalid, as it is both later in date than Link's *Ochotona*, and is preoccupied by Storr's *Lagomys* (1780), which is a synonym of *Arctomys* (*cf.* Miller, Voles, p. 13, footnote 4).

XXI. Leporidæ.

158. *Romerolagus*, Merr.
P. Biol. Soc. Wash. x. p. 169 (1896).

159. *Lepus*, Linn.
S. N. (10) i. p. 57 (1758).

Index of Generic Names.

7. On the Classification of the Palæozoic Echinoderms of the Group Ophiuroidea. By J. W. GREGORY, D.Sc., F.Z.S.

[Received November 5, 1896.]

For fifty years after Forbes, in 1840 [3. p. xiv], proposed to rank the Ophiuroidea as one of the classes of Echinoderma they were divided into two groups—the Ophiuræ and Euryalæ of Joh. Müller, the Ophiuridæ and Euryalidæ of Th. Lyman. In 1867 Dr. Axel Ljungman [7] divided the first group into six families (the Ophiodermatidæ, Ophiolepididæ, Amphiuridæ, Ophiomyxidæ, Ophiocomidæ, and Ophiothricidæ), but Mr. Lyman [10], in his description of the Ophiurids collected during the 'Challenger' Expedition, made no use of family divisions. He simply divided the Ophiuridæ into three groups, of which the first two were unnamed, and the third was merely described as comprising "Astrophyton-like Ophiuroids." Hence Lyman's great monograph, the richest mine of information in the whole range of literature on the Ophiurids, did not contribute so much to their classification as to our knowledge of their anatomy.

As neontologists were in difficulties owing to the lack of a satisfactory arrangement of the recent species, palæontologists were naturally in a worse state; for the anatomical characters of the fossil Ophiurids had been in but few cases satisfactorily determined. We have only to refer to Wright's introduction to the British Jurassic Starfish [20], or to Lütken's [9. pp. 70–75, 78] heroic attempt to improve the generic nomenclature of the Neozoic Ophiurids, to see how unscientific the existing systems were. In 1886 and 1890, Herr B. Stürtz, in two important memoirs [15, 16], described the anatomy of several genera from the Devonian of Bundenbach, in the Bavarian Pfalz. The fossils are pseudomorphs in iron pyrites; owing to the exceptional preservation of the specimens and the skill and patience with which Stürtz dissected them from their clay-slate matrix, their anatomical structure was well displayed. Stürtz's two papers are a great advance on any previous work dealing with Palæozoic Ophiurids; but the author